

EXHIBIT 5



CGS MPF Vessel Safety Management System Manual	Business Unit: Crowley Government Services, Inc.	Effective Date: 1 May 2016	Page 1 of 4
	Prepared by: Director, Operations Integrity	Revision No.: 0	
Approved by: Vice President		Retention: ACT + 10 years	
Lock-Out / Tag-Out			CGS-MSC2-SAF-012

1.0 PURPOSE

- 1.1 To prevent worker injuries and/or property damage caused by accidental release of energy or hazardous substances.

2.0 SCOPE

- 2.1 This procedure applies to Maritime Prepositioning Force (MPF) vessels managed by Crowley Government Services (CGS).

3.0 RESPONSIBILITY

- 3.1 The Master shall ensure adherence to this procedure.
- 3.2 Department Heads and job supervisors shall ensure that these procedures are understood and followed whenever personnel could be at risk due to hazardous energy.
- 3.3 All crewmembers shall comply with this procedure.
- 3.4 Contractor personnel shall comply with this procedure.

4.0 PROCEDURE

Identification of Hazardous Energy and Substances

- 4.1 The potential sources of hazardous energy shall be identified before performing maintenance or inspection of equipment. Consideration of each of these sources shall be included in pre-job planning. Maintenance procedures may include checklists for each item requiring a lock or tag and shall be used when available. Additional information for specific systems may be found in work procedures and manufacturer's instructions. Sources of hazardous energy and substances that shall be considered include:

Source	Examples
Electrical	Energized circuits, electrical shock, and unexpected activation of equipment.
Mechanical	Moving machinery components such as gears, levers, shafts, flywheels, fan blades, springs, elevators, etc.
Pressure	Release of pressurized gas or liquid from tanks, piping, valves, sea chests, etc.
Hydraulic	Release of pressurized hydraulic fluid or operation of remote control valves or other devices.
Thermal	Heat contained in furnaces, piping, heat exchangers, etc.
Chemical	Component reactions
Stored	Batteries, capacitors, tensioned springs, gravity systems

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CGS MPF Vessel Safety Management System Manual	Business Unit: Crowley Government Services, Inc.	Effective Date: 1 May 2016	Page 2 of 4
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4.2 All potential hazardous energy sources shall be isolated from the equipment or system that will be serviced. Two-level isolation may be possible in some instances and shall be used when possible (i.e., electrical supply may be interrupted at the main switchboard and at the motor controller, piping systems may contain multiple valves, etc.).

4.3 Each point of isolation shall be tagged. Tags shall be the commercially available type intended for use in Lock-Out/Tag-Out. They shall have an appropriate message such as "Danger - Do Not Operate" or such other statement prohibiting unauthorized removal. The responsible person's name, date, equipment being serviced, and other pertinent information shall be included on each tag. Tags shall be affixed using plastic cable ties or other substantial means. A sample tag is shown below.



4.4 Locks shall be applied at the point of isolation closest to the energy source where practicable. When only one level of isolation exists, locks or other physical means of preventing inadvertent release of energy shall be used. Removal of valve hand-wheels, installation of blocking devices, chains, line blinds, etc. may be considered as satisfactory alternatives to locks when the physical arrangement does not provide for the placement of a lock.

4.5 The Chief Engineer shall create a log book, including a list of all systems or equipment that have been locked and tagged out of service and a copy of the Lock-Out/Tag-Out Permit (Form [CGS-MSC2-FORM-210](#)). The log book shall clearly indicate the current status of the equipment that was locked/tagged out, i.e. remains locked/tagged out (open), lock out/tag out completed (closed). The log book shall be kept in a central location such as the Engine Control Room, Deck Office, etc.

4.6 The watch officer or other responsible person shall pass on to the relieving watch or shift all information on the status of systems that have been locked and tagged out of service.

4.7 The Lock-Out/Tag-Out Permit (Form [CGS-MSC2-FORM-210](#)) is written documentation indicating that sources of hazardous energy and substances have been isolated prior to work being performed on systems or machinery.



CGS MPF Vessel Safety Management System Manual	Business Unit: Crowley Government Services, Inc.	Effective Date: 1 May 2016	Page 3 of 4
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Lock-Out / Tag-Out			CGS-MSC2-SAF-012

- 4.8 Stored energy shall be released and a verification of the zero energy state made before servicing equipment or systems. Consideration shall be given to the possibility of valve leaks, etc. Methods of verifying isolation include: testing with electrical test equipment; opening a vent, gauge line, or drain valve; operating start switches; attempting to rotate machinery that should be restrained; checking temperatures, etc.
- 4.9 An inspection by the responsible person shall be made at the completion of service to ensure that the equipment or system is ready to be tested and returned to service. Tools shall be removed from the area, guards put back in place, and all affected employees notified that the means of isolation and the Lock-Out/Tag-Out will be removed. Protective devices and tags shall only be removed under the direct supervision of the responsible person. Equipment may be re-energized after verification that tags have been removed and that personnel are clear of any hazard. Startup of the equipment shall be under the supervision of the Department Head or responsible person.

Lock-Out/Tag-Out Procedures for Ballast Tank Entry

- 4.10 When ballast tank manhole/access covers are opened for tank inspection or maintenance, the ballast pumps shall be locked-out/tagged-out.
- 4.11 Once a visual inspection has been completed by the Officer in Charge of the tank entry to ensure that all tank manhole/access covers have been properly secured, the ballast pump lock-out/tag-out may be removed.

5.0 RELATED DOCUMENTATION

- 5.1 Lock-Out Tag-Out Permit (Form [CGS-MSC2-FORM-210](#))



CGS MPF Vessel Safety Management System Manual	Business Unit: Crowley Government Services, Inc.	Effective Date: 1 May 2016	Page 4 of 4
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